

**ABSTRACT**

In a rotary nozzle brick body formed into a substantially egg-like shape in its plan view, the present invention secures a contact area of a nozzle portion and improves a configuration factor which considerably affecting the durability of the body.

A rotary nozzle brick body is characterized in that the external shape in plan view is comprised of first circular portions (G), second circular portions (H), third circular portions (K) and tangent lines connecting the first circular portions and the third circular portions so that a substantially elliptical shape is formed by increasing the circular portions and shortening the tangent lines, instead of a substantially egg-like shape having long tangent lines.

Since the substantially elliptical shape is formed by reducing the linear portion of the brick body in its plan view while the shape is expanded circularly, the contact area is maintained even if the sliding plate brick is rotated up to its full-opened state, thereby eliminating a fear that molten steel or the like may leak.

### Description of Reference Numerals

- 1      Brick body
- 1a     Conventional brick body
- 2      Fixed plate brick
- 2     Conventional fixed plate brick
- 3      Sliding plate brick
- 3a     Conventional sliding plate brick
- 4      Nozzle hole
- 4a     Nozzle hole
- 5      Nozzle hole
- 5a     Nozzle hole
- 5b     Nozzle hole
- 5c     Nozzle hole
- 6      Iron band
- 6a     Iron band
- 7      Sheet
- 7a     Sheet
- 8      Ladle
- 9      Bottom portion
- 10     Base plate

- 11      Upper nozzle
- 12      Lower nozzle
- 12a     Lower nozzle
- 13      Nozzle hole
- 14      Nozzle hole
- 14a     Nozzle hole
- 15      Upper case
- 16      Lower case
- 17      Concave portion
- 18      Concave portion
- 19      Gear
- 20      Reducer
- 21      Gear
- 22      Drive motor
- 23      Opening portion
- 24      Circular edge portion
- 24a     Circular edge portion
- 25      Rotary nozzle
- A       Safety distance when the nozzle hole in the brick body is fully closed by 90°

A1 30±15 mm

B Safety distance when the nozzle hole in the brick body is fully opened.

B1 60 mm to 15 mm

C Distance between the center X of the brick body and the center Y of the nozzle hole

D Diameter of the nozzle hole in the brick body

E 0 mm to 15 mm

F Thickness of the lower end portion of the upper nozzle

G First circular portion

H Second circular portion

H1 Second circular portion

K Third circular portion

J Tangent line

J1 Tangent line

L1 Distance

L2 Distance

L3 Distance

L4 Distance

L5 Distance

L6      Distance

X      Center

Z      Intersection

θ       $40 \pm 10$  mm